


EUROPEAN PATENT APPLICATION

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H04N 1/40, G09G 1/14

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DE FR GB IT

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54 Piece-wise printed image enhancement for dot matrix printers.

Print enhancement circuitry (421) to enhance the printed image produced by a laser beam printer is interposed between the character generator circuits (411) and the laser drive circuits (391) to modify the laser drive signals provided by the character generator circuits (411). Bit data representing successive lines of the bit map for a desired image are stored in a first-in first-out (FIFO) buffer (101). The bit pattern sample window (109) having a central cell (bit) (111) and a selected (arbitrary) number of neighboring bits is compared to a number of matching bit patterns or templates (77-95), each of which is associated with

an error element or cell. When a logic matching network (103) detects a match, a modification signal associated with a unique compensation cell (bit) (121-135) is generated. The sample window central bit (111) is then replaced (modified) with the unique compensation bit required by the matching template. In this manner, all bits in a desired bit map (90), or set of bit maps, are examined and their corresponding laser drive signals modified to compensate for the errors associated with the matched templates in a piece-wise manner.

EP 0 356 038 A3

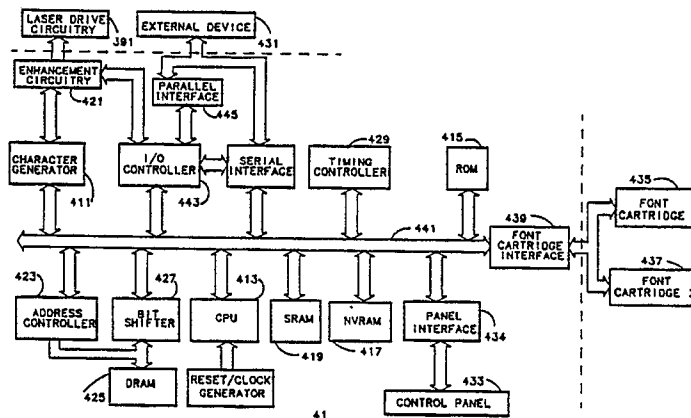


FIG 5



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 8)
X	US-A-4681424 (S.KANTOR et al.) * column 1, line 29 - column 2, line 26; column 11, line 48 - column 12, line 5 *	1,2,8,9	B41J2/455 G06K15/12 H04N1/40 G09G1/14
Y	---	5,13,17, 18	
X,D	US-A-4625222 (BASSETTI et al.) * figure 3; claim 1 *	1,8	
A	GB-A-2172169 (DAINIPPON SCREEN MAN.) * figures 2,6; page 4, lines 64 - 70; claim 1 *	1,2,8,9	
X	EP-A-199 502 (IBM) * figures 5, abstract; page 8, column 14, line 26, page 9, column 15, line 20; page 10, column 18, lines 24 - 32; claim 1 *	3,4,6,7, 10,12, 14-16, 19,20	
Y	---	5,13,17, 18	TECHNICAL FIELDS SEARCHED (Int. Cl. 8)
E	EP-A-348047 (CROSFIELD) * figures 4; abstract; column 5, lines 5 - 21 *	15,19	G06K G09G G06F H04N
A	WO-A-86 04703 (DEMONICS) * figures 1, page 22, lines 9 - 22; page 23 line 28 - page 24, line 28 *	3,6,10, 11,15	
A	DE-A-3729936 (CANON)		
A	EP-A-189325 (VICTOR)		
A	EP-A-177704 (TOSHIBA)		
The present search report has been drawn up for all claims.			
Place of search BERLIN		Date of completion of the search 05-09-1990	Examiner S.C. FRITZ
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

X LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1,2,8,9 Controlling orientation and ink proportionality of printed cells for image enhancement
2. Claims: 3-7,
 10-20 Comparing image pattern data with characteristic curvatures to find proper data conversion for image enhancement

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: